

Case 3566***Tropidolaemus* Wagler, 1830 and *Cophias wagleri* F. Boie, 1827
(currently *Tropidolaemus wagleri*) (Reptilia, Squamata, VIPERIDAE):
proposed conservation**

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Abstract. The purpose of this application, under Articles 12 and 75.3 of the Code, is to conserve the long and continuing usage of the specific name *wagleri* for a Southeast Asian species of venomous snake by ruling that the specific name *Cophias wagleri* was established by F. Boie (1827). This would involve setting aside all previous usages of that name and designating a neotype. As originally proposed by Schlegel (1826) *Trigonocephalus* [*Cophias*] *wagleri* is a replacement name for *Coluber sumatranus* Raffles, 1822 but the Commission is now asked to rule that this name denotes a separate taxon. These actions are required to avoid synonymy between the two specific names and between the generic names *Tropidolaemus* Wagler, 1830 and *Parias* Gray, 1849.

Keywords. Nomenclature; taxonomy; Reptilia; Serpentes; *Parias*; *Tropidolaemus*; *Tropidolaemus wagleri*; *Trimeresurus* (*Parias*) *sumatranus*; snakes; Southeast Asia.

1. Raffles (1822, p. 334) described a new species of venomous snake from the island of Sumatra as *Coluber sumatranus*. It has been recognized as a valid species following Lidth de Jeude (1886, p. 44) and currently is usually referred to the viper genus *Trimeresurus* Lacépède, 1804, subgenus *Parias* Gray, 1849 (p. 11) (recognized as a genus by some authors).

2. Heinrich Boie was appointed curator at the *Rijksmuseum van Natuurlijke Historie te Leiden* (Royal Museum of Natural History, subsequently known as the National Naturhistorisch Museum and now as Naturalis) in 1821. He almost immediately began work on a large illustrated monograph entitled *Erpétologie de Java*, hereafter the *Erpétologie*, while awaiting his opportunity to initiate fieldwork in the Dutch East Indies. He finally left the Netherlands for Java in 1825 and died there

in 1827. H. Boie's *Erpétologie* and the watercolor figures that were to form accompanying plates were never published. A number of subsequent workers drew heavily upon them in their own publications, often using scientific names coined by Boie and in some cases copying his descriptions. Four early papers based to some extent or almost exclusively on the *Erpétologie* are Fitzinger (1826), Friedrich Boie (1826), Schlegel (1826a), Schlegel (1826b) and Friedrich Boie (1827). The last three are particularly significant in the present context. In the past there has been some confusion regarding the order of appearance of these publications. Meise & Hennig (1935) for Fitzinger (1826), Brongersma et al. (1966) for F. Boie (1826), and Savage & Myers (2006) for the others have established the chronology as follows: Fitzinger (prior to July 1 in 1826); F. Boie (after Fitzinger and before Schlegel, 1826a; probably no later than August, 1826); Schlegel (October for 1826a); Schlegel (by default December 31, 1826, for 1826b); F. Boie (1827).

3. Schlegel (1826a, p. 234) in his introduction states '(...) la direction du Musée royal des Pays-Bas a cru devoir me charger de donner dès à présent un extrait succinct de l'ouvrage de M. Boié.' Translation: '(...) the administration of the Musée royal des Pays-Bas [now Naturalis] considered it necessary to charge me with preparing the now already succinct extract from the work of M. Boie.' All of the new names in this extract are from the *Erpétologie* but most are nomina nuda. However, three snake species names are proposed as replacement names for previously described taxa as follows:

Brachyorrhos kuhlii (p. 236); a new replacement name for *Brachyura brachyurus* Kuhl (= *Coluber brachyurus* Kuhl, 1820) preoccupied by *Coluber brachiurus* Shaw, 1802 and a senior objective synonym of *Atractus trilineatus* Wagler, 1828. This name was suppressed by the Commission (Opinion 2210, BZN 65: 239–240) for the purposes of the Principle of Priority so as not to replace *Atractus trilineatus* Wagler, 1830;

Calamaria linnaei (p. 237); a new replacement name for *Coluber calamaria* (sic) Linnaeus, 1758; probably to avoid tautonymy; ruled by the Commission (Opinion 2196, BZN 65: 239) that it is not to be treated as a replacement name but as a new available name dating from its use in F. Boie (1827);

Cophias wagleri (p. 239); a new replacement name for *Coluber sumatranus* Raffles, 1822 in combination with the generic name *Trigonocephalus* (listed as *C.[ophias] sumatrensis* Raff.). These names are all proposed in the same format with the express purpose of establishing the usage of the H. Boie names over the names they are proposed to replace. The names from the *Erpétologie* are consequently listed first and followed by the replacements in parentheses. In all three cases the names are made available by bibliographic reference according to Article 12.2.1 of the Code.

4. Schlegel's (1826b) listing for *Cophias wagleri* (p. 239), the subject of this application, is: 'Gen.: TRIGONOCEPHALUS Ooppel Esp. (...). M. Boié nomme ceux qui ont la tête entièrement écaillée *Cophias* Merr.[em]. Esp. (...). *C. Wagleri* Boié (*C. sumatrensis* Raff.)'. Translation: 'Gen.[us]: TRIGONOCEPHALUS Ooppel Spec.[ies]: (...). Mr Boié named as *Cophias* Merr.[em] those which have the head entirely covered with [small] scales. Spec.[ies]: (...) *C. Wagleri* Boié (*C. sumatrensis* Raff.)'. The spelling of Raffles's specific name is a subsequent spelling as Raffles never described any species as *sumatrensis*. Schlegel's (1826b, col. 294) *Nachrichten* differs slightly in content and organization from the French version (1826a) but in nothing that affects

the current case. The citation in the German version is ‘*Cophias*. Sp.: (. . .) *Wagleri* Boie (*C. sumatrensis* Raff.)’. We follow McDiarmid et al. (1999, p. 345) in regarding Schlegel’s spelling of *sumatrensis* as an unjustified emendation because Schlegel demonstratively established his intent by using the emended spelling in two separate publications.

5. That it was Schlegel’s intent that all three names were replacement names is evidenced further by his using the three trivial names as the correct names for the detailed descriptions in his 1837 monograph of snakes in preference to the older names of Linnaeus (1758), Kuhl (1820), and Raffles (1822). It is as well to remember that in this era priority was not universally applied and authors, especially Schlegel (1837), frequently used younger names or coined new ones that they thought more appropriate than some older names as in this case. Specifically Schlegel (1837, p. 543) states in the description of *T. wagleri* ‘C’est aussi le COL. SUMATRANUS de Raffles (3);’ Translation: ‘It is also the Col. sumatranus of Raffles (3);’ and cites Raffles original (1820) publication of that name in the indicated footnote.

6. F. Boie (1827, col. 561) used the name *wagleri* again for a species of *Cophias* cited as follows: ‘*Cophias* (. . .) *Wagleri* H. Boie. *Erp. de Java*. Col. *Sumatranus* Raffles. *Seba* T II tab. 68 fig. 4’. Besides Raffles’s species and reference to H. Boie’s unpublished manuscript, F. Boie added a specimen depicted in *Seba* (1735) as belonging to this taxon.

7. In order to ascertain what was actually contained in Boie’s original manuscript of the *Erpétologie*, one of us (Vogel) examined it at Naturalis and made photocopies of the handwritten twelve line Latin description. The Latin description is not reproduced in Schlegel (1826a) or Schlegel (1826b). Furthermore, it does not appear as a translation into French in the 1826a paper or into German in the 1826b version. Similarly, neither the Latin description nor a translation of it appears in F. Boie (1827). Although Schlegel (1837, p. 543) cites plate 49 of the *Erpétologie* as being *Trionocephalus wagleri* (= *Cophias wagleri*), this plate was never published and was not located in the Naturalis archives. Insofar as can be determined no specimens currently in the Leiden collections were among those described by H. Boie in his manuscript. However, H. Boie’s description without any doubt refers to the snake currently called *Tropidolaemus wagleri* (Vogel et al., 2007, p. 12) in having (Translation) ‘a bright green postorbital streak, body and tail above with black and yellow, black-edged parallel crossbars, below yellowish-green, sides dotted with green 140–140 [ventral scutes]+53–62 [subcaudal scutes].’ Inasmuch as H. Boie made no mention of *Coluber sumatranus* in his manuscript, Schlegel (1826a) is the person responsible for the nomenclatural act making *Cophias wagleri* available and under Art. 50.1 of the Code becomes the author of that name.

8. David & Vogel (1996, p. 170), David & Ineich (1999, p. 296), McDiarmid et al. (1999, p. 351) and Vogel et al. (2006, p. 7) regarded Schlegel’s (1826a) usage to be a nomen nudum as there was no diagnosis or description. However, only an indication such as a bibliographic reference, as in this case to Raffles (1822), is required to make a name available if published prior to 1931 under Article 12.2.1 of the Code.

9. Wagler (1830, p. 175) established the monotypic genus *Tropidolaemus* for ‘*Cophias wagleri* H. Boie, *Isis*, 1827, col. 561 (*Col. sumatranus* Raff.)’. As we show in para. 7 above, the authorship of *C. wagleri* should be credited to Schlegel (1826a) but that has no bearing on the availability of *Tropidolaemus*. The combination

Tropidolaemus wagleri has been almost universally used for the Indo-Malayan pitviper (but absent from Java) called *Tropidolaemus wagleri* by Wagler since the generic name was resurrected by Burger (1971, p. 109). Prior to that time the species was referred to a number of nominal pitviper genera but usually to *Trimeresurus* Lacépède, 1804 (type species *Trimeresurus viridis* Lacépède, 1804 [a preoccupied name] now *Trimeresurus insularis* Karter, 1977).

10. David & Vogel (1996, p. 171) and David & Ineich (1999, p. 296) thought that the original proposal of a name for the species described and figured in the never published *Erpétologie* was by Wagler (1830, p. 130) when he established the monotypic genus *Tropidolaemus*. However, David & Vogel later in Vogel et al. (2007, p. 8) agreed with McDiarmid et al. (1999, p. 351) that the name *Cophias wagleri* was made available by F. Boie (1827). This was based on the conclusion that the Seba's (1735) figure cited in F. Boie's paper is of a different taxon than Raffles's species but was conspecific with the form currently called *Tropidolaemus wagleri*. As pointed out above this interpretation is not tenable as the name *Cophias wagleri* dates from Schlegel (1826a) not F. Boie (1827).

11. *Cophias wagleri* Schlegel, 1826 as a new replacement name for *Coluber sumatranus* Raffles, 1822 takes the same type specimen (Article 72.7) as Raffles's name and becomes a junior objective synonym of *Coluber sumatranus*, although it has its own author and date for purposes of synonymy and homonymy. Unfortunately, as F. Boie (1827) cannot be considered the describer of *Cophias wagleri*, the designation of a neotype (MNHN 1879.0708, Paris Museum, from the Bedagai River, Sumatra Barat Province, Sumatra, Indonesia) for *C. wagleri* by Vogel et al. (2007, p. 8) is invalid at this stage, as is their conclusion that the snake figured in Seba (1735) is a syntype. Nevertheless, the specimen they selected meets all other qualifying conditions under Article 75.3 for neotype designation.

12. McDiarmid et al. (1999, p. 346) and we ourselves have been unable to locate the holotype of *Coluber sumatranus* Raffles in any collection and it appears to be lost or destroyed. However, the description in Raffles (1820) provides enough detail to show that his snake is of a different species from the one currently called *Tropidolaemus wagleri*, which is the taxon described by H. Boie in the *Erpétologie* and named by Schlegel (1826a).

13. Schlegel's (1826a) subsequent spelling, *C.[oluber] 'sumatrensis'*, as an unjustified emendation, has the same holotype as Raffles's *Coluber sumatranus* and is an available name with its own author and date (Schlegel, 1826) under Article 33.2.3 of the Code, but this does not affect the status of *C. wagleri*. That Schlegel was referring to the species described by Raffles is fully supported by the fact that F. Boie (1827) and Wagler (1830) as well as Schlegel (1837, pp. 542–543) all list Raffles's *sumatranus* as a synonym of *wagleri*.

14. As *Cophias wagleri* Schlegel, 1826 is a junior objective synonym of *Coluber sumatranus* Raffles, 1822, it follows that under the strict application of the Code the long used species name, currently in the combination *Tropidolaemus wagleri*, would be replaced by the available name *Tropidolaemus maculatus* (Gray, 1842, p. 48) for the species currently recognized as *Tropidolaemus wagleri*.

15. The above conclusion has additional nomenclatural ramifications. As noted above Wagler (1830) established a new genus, *Tropidolaemus*, for *Cophias wagleri* Schlegel, 1826, which must take as its sole included species the senior synonym

Coluber sumatranus Raffles. Currently *C. sumatranus* is usually assigned to the subgenus (or genus, according to some authors) *Parias* Gray, 1849 (type species: *Megaera flavamaculatus* Gray, 1842), along with four other species. Application of the Code, without relief through a ruling of the Commission, would require replacement of *Parias* with *Tropidolaemus* and the proposal of a new generic name for the five taxa usually referred to the latter genus, as *Tropidolaemus* has no synonyms.

16. Both *Coluber sumatranus* Raffles, 1822 and *Cophias wagleri* Schlegel, 1826 have been used under various generic names for two very different valid taxa from Lidth de Jeude (1886, p.43) onward and most recently have been placed in different genus-group taxa. Their synonymisation would seriously compromise the fundamental ideals of stability and universality of nomenclature espoused by the Code. In addition, that action would have a destabilizing effect on the genus-group names *Tropidolaemus* and *Parias*. Strict application of the Rules would also result in serious confusion of the identity of these dangerously venomous snakes which are widely reported in the medical literature on snakebite and in association with their specific antivenins.

16. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to rule that all usages of the name *Cophias wagleri* prior to F. Boie (1827) are unavailable;
 - (b) to rule that the nominal species *Cophias wagleri* (misidentified as *Coluber sumatranus*) shall not be treated as a replacement name but as a new available name published by F. Boie (1827);
 - (c) to set aside all type fixations for *Cophias wagleri* F. Boie (1827) prior to that by Vogel et al. (2007) of specimen MNHN 1879.0708 in Muséum national d'Histoire naturelle, Paris;
- (2) to place on the Official List of Generic Names in Zoology the name *Tropidolaemus* Wagler, 1830 (gender: masculine), type species by monotypy *Cophias wagleri* F. Boie, 1827 as ruled in (1)(c) above;
- (3) to place on the Official List of Specific Names in Zoology the name *wagleri* F. Boie, 1827, as published in the binomen *Cophias wagleri* (specific name of the type species of *Tropidolaemus*).

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Acknowledgement of receipt of this application was published in BZN **68**: 94.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).